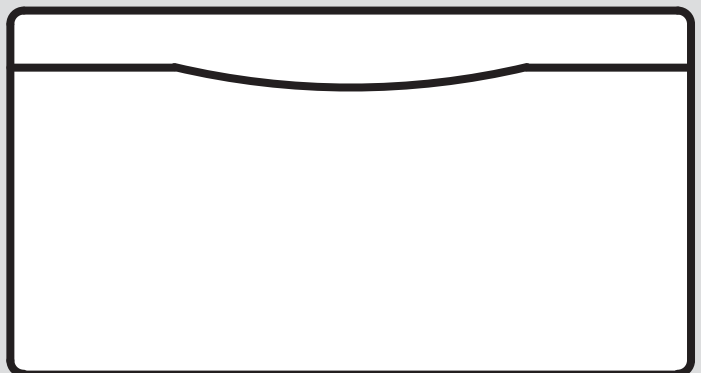


Control Centre

VR 66/2



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1 Notes on the installation instructions





1.4 Validity of the instructions

1.1 Symbols used

The symbols used in the text are explained below:

Symbol	Explanation
	Symbol that denotes useful tips and information
	Symbol for a required action

The warning notes are classified in accordance with the severity of the possible danger using the following warning signs and signal words.

Warning symbol	Signal word	Explanation
	Danger	Immediate risk of death or risk of severe personal injury.
	Danger	Risk of death from electric shock.
	Warning	Risk of minor personal injury.
	Caution	Risk of material or environmental damage.

1.2 Observe other applicable documents

- Observe absolutely all operating and installation instructions enclosed with the product, for the various parts and components of the system.

1.3 Storing documents

- Pass these instructions and all other applicable documents to the system user.

The system user should retain these instructions so that they are available when required.

These instructions apply exclusively to:

Type designation	Article number
VR 66/2	0020135785



2 Safety

All electrical work performed on the equipment must be carried out by a qualified engineer or Vaillant Group Service engineer.

This equipment must only be installed by a qualified engineer, to ensure that the applicable regulations and rules are adhered to.

When work on the appliance is completed, perform an operational test and check for safety in accordance with BS EN 7671.

2.1 General safety advices

- Before reading this chapter, also read the general safety advice of the operating instructions.

2.1.1 Danger to life by electric shock

Touching live connections can cause serious personal injury.

- Before carrying out any work on the product, switch off the power supply.
- Secure the power supply against being switched on again.

2.1.2 Danger to life by escaping gas

Incorrect installation can cause leakages and explosion.

- Make sure there are no stresses in the gas line.
- Correctly position the seals.
- Observe the legal directives and the local regulations for gas supply companies.

2.1.3 Danger to life by escaping flue gases due to unlocked openings

Flue gases can escape through openings in the flue pipe. Inspection chambers in the flue gas pipe can be opened.

- Open inspection chambers only if you are a competent person.

Close all inspection chambers before start-up.

2.1.4 Danger to life due to missing or not properly working safety devices

Missing safety devices can cause life-threatening scalding and other injuries, for example by burst pipes.

The information contained in this document do not show all schemes required for a professional installation of safety devices.

- Install the necessary safety devices in the system.
- Inform the user about the function and location of safety devices.
- Observe the relevant national and international laws, standards and guidelines.
- The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children being supervised not to play with the appliance.

2.1.5 Danger of scalding due to the hot water!

- There is a danger of scalding at the hot water draw-off points if the hot water temperatures are higher than 60°C. Young children and elderly persons are particularly at risk, even at lower temperatures.
- Select the temperature so that nobody is at risk.
- Explain to the user how to select the best temperature taking into account the risk of scalding and the risk of legionella.

2.1.6 Danger due to improper use

Nonprofessional work on the product can cause damage to the installation and as a consequence even personal injury.

- Only work on the product if you are a competent person.

2.1.7 Risk of material damage by additives in the heating water

Frost and corrosion protection agents can cause changes to seals, noise during heating mode and may lead to other consequential damage.

- Do not use any unsuitable frost or corrosion protection agents.

2.1.8 Risk of material damage caused by unsuitable tools

The use of unsuitable tools or improper use thereof may cause damage, such as gas or water leaks.

- When tightening or loosening threaded connections, always use suitable opened spanners, but do not use pipe wrenches, extensions, etc.

2.1.9 Risk of structural damages by escaping water

Incorrect installation can cause leakages.

- Make sure there are no stresses in the hydraulic lines.
- Correctly position the seals.

2.2 Intended use

The product is a state-of-the-art product which has been constructed in accordance with recognised safety regulations. Nevertheless, there is still a risk of injury or death to the user or others or of damage to the product and other property in the event of improper use or use for which it is not intended.

The product is intended as a heating appliance for sealed central heating installations (heating / cooling and hot water) to consume a minimum of energy to optimize the energy bill.

Intended use includes the following:

- observing the included operating, installation and maintenance instructions for this product and any other parts and components of the system
- installing and fitting the product in accordance with the product and system approval
- complying with all of the inspection and maintenance conditions listed in the instructions.





It will be necessary to install the unit in a location where it will not be exposed to moisture or water splashes. Observe the electrical protection (IP) contained in the technical data. Any other use than the use described in the instructions at hand or any use extending the described use is not intended.

Any direct commercial or industrial use is also deemed to be improper.

2.3 Rules and regulations

2.3.1 List of relevant standards for Great Britain and Ireland

- Observe the national regulations, standards, directives, ordinances and laws.



You can find a list of relevant standards at:
www.vaillant.co.uk/standards

2.3.2 Benchmark


Vaillant is a licensed member of the Benchmark Scheme. Benchmark places responsibilities on both manufacturers and installers. The purpose is to ensure that customers are provided with the correct equipment for their needs, that it is installed, commissioned and serviced in accordance with the manufacturer's instructions by a competent person approved at the time by the Health and Safety Executive and that it meets the requirements of the appropriate Building Regulations. The Benchmark Checklist can be used to demonstrate compliance with Building Regulations and should be provided to the customer for future reference. Installers are required to carry out installation, commissioning and servicing work in accordance with the Benchmark Code of Practice which is available from the Heating and Hotwater Industry Council who manage and promote the Scheme.

Benchmark is managed and promoted by the Heating and Hotwater Industry Council.



For more information visit www.centralheating.co.uk

2.4 CE label

 The CE marking shows that the products comply with the basic requirements of the applicable directives as stated on the declaration of conformity.

The declaration of conformity can be viewed at the manufacturer's site.

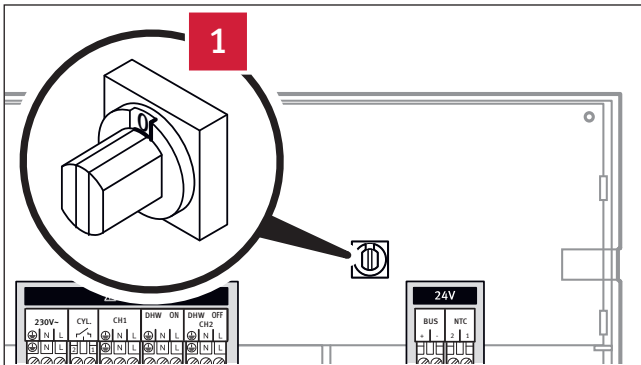


3 Description of the product

3.1 Product Overview

The control centre provides a system solution which permits eBUS controllers to be combined with room thermostats, valves, multizone heating and domestic hot water cylinder systems. There are 3 functional modes that can be selected with the rotary switch:

- Multizone mode (position 0) with VR 66/2 functions in combination with VRT 350
- Multizone mode (position 2) with VR 66/2 functions in combination with one VRT 380 and one VR 92
- Monozone mode (position 1) with VR65 functions.



Key

- 1 Rotary switch

3.2 Product structure

3.2.1 Monozone operation mode

The Monozone operation mode is compatible with:

- ebus control range
- system and open vent boiler

It allows the controller to communicate with the traditional 230 V zone valves and DHW storage cylinder. Information about the heat required by the cylinder is communicated to the heating appliance. The heating appliance (boiler) then decides whether a hot water request has to be fulfilled and sends a signal to position the 230 V zone valves.

The initial start-up of the control centre is carried out together with the initial start-up of the boiler.



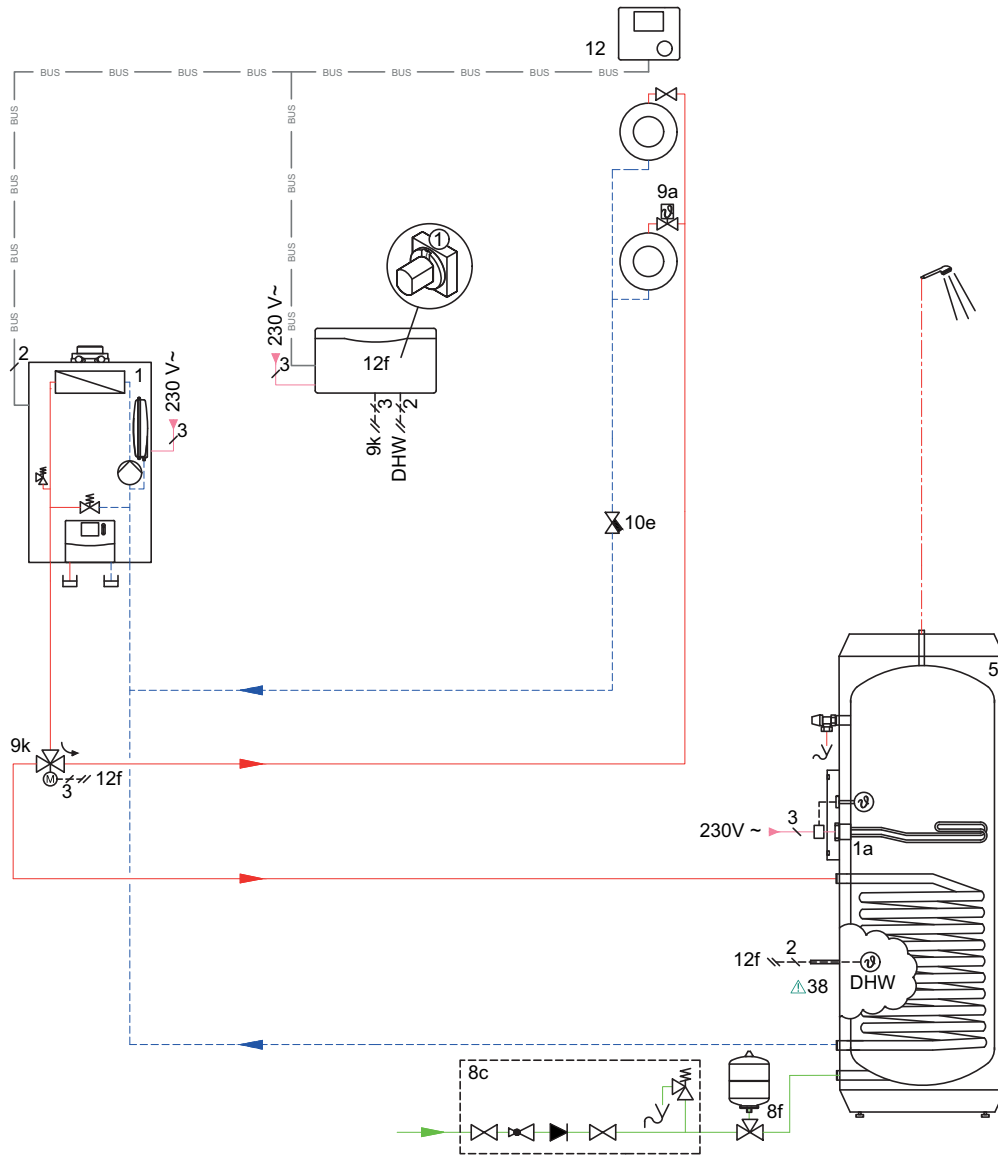
If a VR65 is replaced by a VR 66/2 it has to be set on monozone mode.

3.2.2 Priorities are defined as follows:

Value of diagnostic code d.70	Meaning
0	Hot water priority - The 3-port valve is in the heating or hot water position depending on the operating mode. - With 2-port valves, either the DHW valve or the CH valve is open, both valves are closed on standby.
1	Enable mid position - The 3-port valve is in the mid position for simultaneous heating and hot water request, or in the heating or hot water position, depending on the operating mode. - With 2-port valves, both valves are open during simultaneous heating and hot water request. Otherwise, only one valve is always open and both valves are closed on standby.
2	Only heating mode (only for test operation!) - Only the CH valve is activated.

NOTE: Factory settings of boiler = 0 : hot water priority.

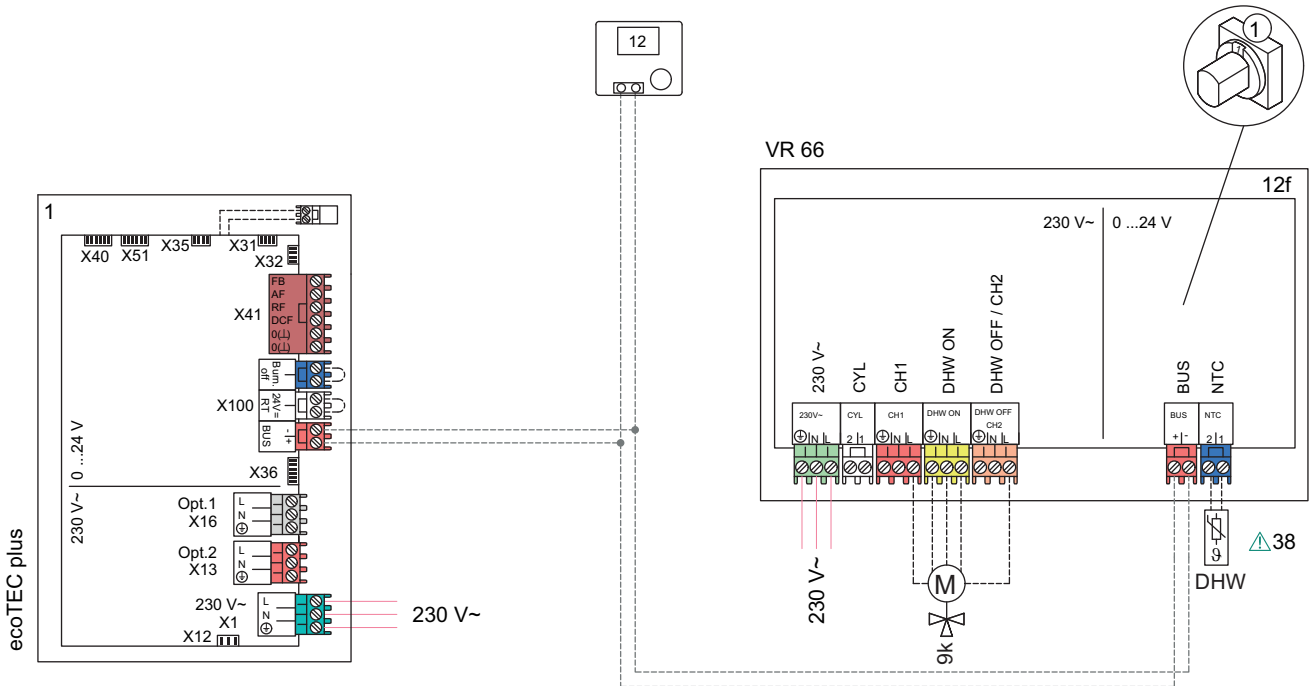
3.2.3 Monozone mode: Open vent or system boiler with DHW cylinder, 3-Port Valve



Key

- 1 Heat generator
- 1a Back-up heater for domestic hot water
- 5 Monovalent domestic hot water cylinder
- 8c Safety assembly for the potable water connection
- 8f Expansion vessel for potable water
- 9a Single-room temperature control valve (thermostatic/motorised)
- 9k 3-port mixing valve
- 10e Line strainer with magnetite separator
- 12 System control
- 12f VR 66/2 control centre

⚠ 38 If a thermostat shall be used, instead of the DHW temperature sensor; remove the DHW temperature sensor, mount the thermostat, and connect the thermostat on clamp 'CYL'.

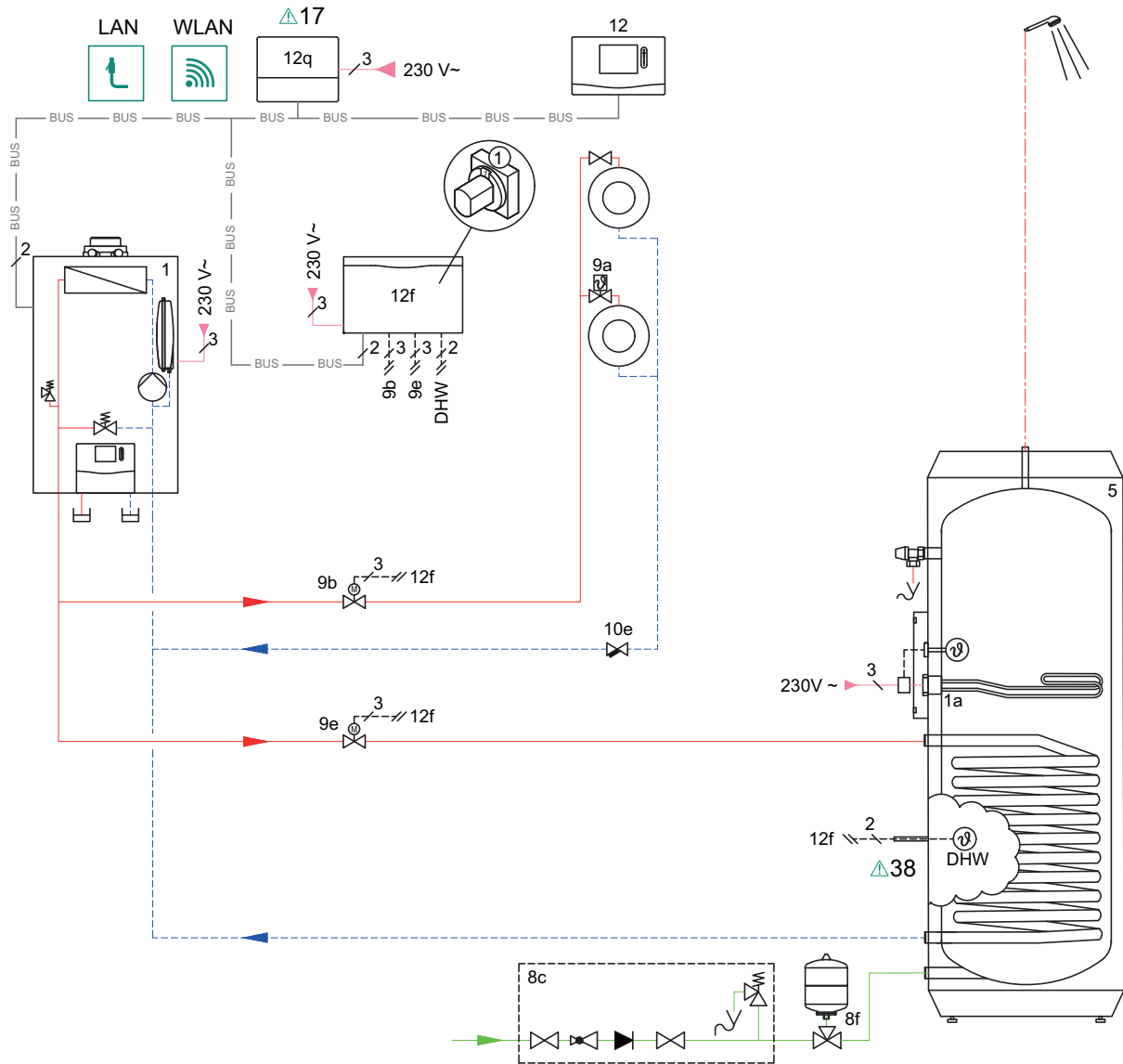


3-port valve electrical connections:

- Connect the live wire (white or brown) of the valve to the "L" of the CH1 connector.
- Connect the earth wire (yellow/green) of the valve to the earth of the DHW ON connector.
- Connect the neutral wire (blue) of the valve to the "N" of the DHW ON connector.
- Connect the live wire (orange) of the valve to the "L" of the DHW ON connector.
- Connect the live wire (grey) of the valve to the "L" of the DHW OFF CH2.

⚠ 38 If a thermostat shall be used, instead of the DHW temperature sensor; remove the DHW temperature sensor, mount the thermostat, and connect the thermostat on clamp 'CYL'.

3.2.4 Monozone mode: Open vent or system boiler with DHW cylinder, two 2-Port Valves

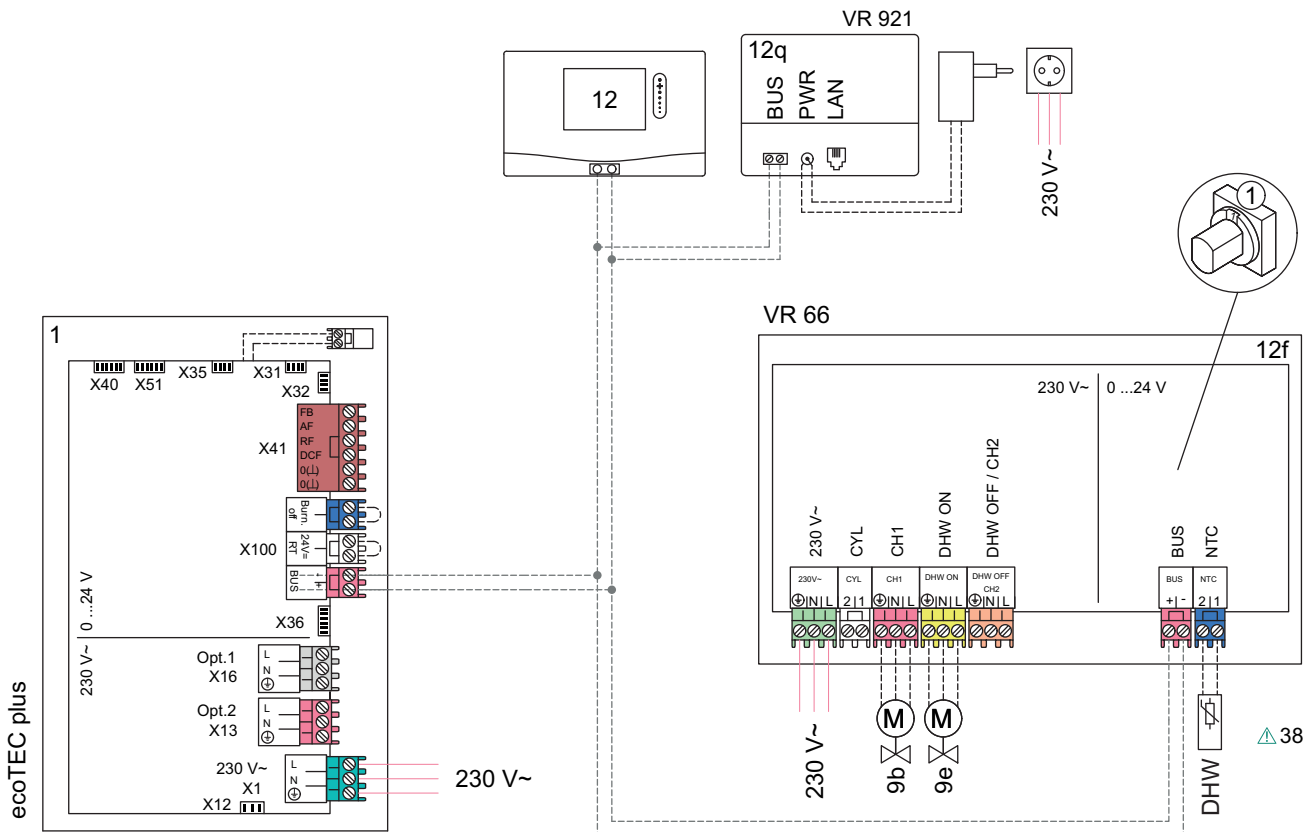


Key

- 1 Heat generator
- 1a Back-up heater for domestic hot water
- 5 Monovalent domestic hot water cylinder
- 8c Safety assembly for the potable water connection
- 8f Expansion vessel for potable water
- 9a Single-room temperature control valve (thermostatic/motorised)
- 9b Zone valve
- 9e Diverter valve for potable water
- 10e Line strainer with magnetite separator
- 12 System control
- 12f VR 66/2 control centre
- 12q Internet gateway (optional)

△ 17 Optional component

△ 38 If a thermostat shall be used, instead of the DHW temperature sensor; remove the DHW temperature sensor, mount the thermostat, and connect the thermostat on clamp 'CYL'.



⚠ 38 If a thermostat shall be used, instead of the DHW temperature sensor; remove the DHW temperature sensor, mount the thermostat, and connect the thermostat on clamp 'CYL'.

3.2.5 Multizone operation mode

The Multizone operation mode is compatible with:

- VRT 350 (using rotary switch position 0) or
- VRT 380 and VR 92 (using rotary switch position 2)
- system, combi and open vent boiler

The information about the heating or hot water demand is sent by the room thermostat via the control centre to the boiler. The VR 66/2 then decides if the hot water demand needs to be fulfilled and drives the valves.

In this way, the boiler can store different target temperatures for heating and hot water modes.



The multizone mode is only compatible with VRT 350 or VRT 380 combined with VR 92. No other room thermostats are compatible. The multizone mode will NOT support weather compensation and cannot be used on Y plan systems with three port motorised valves.

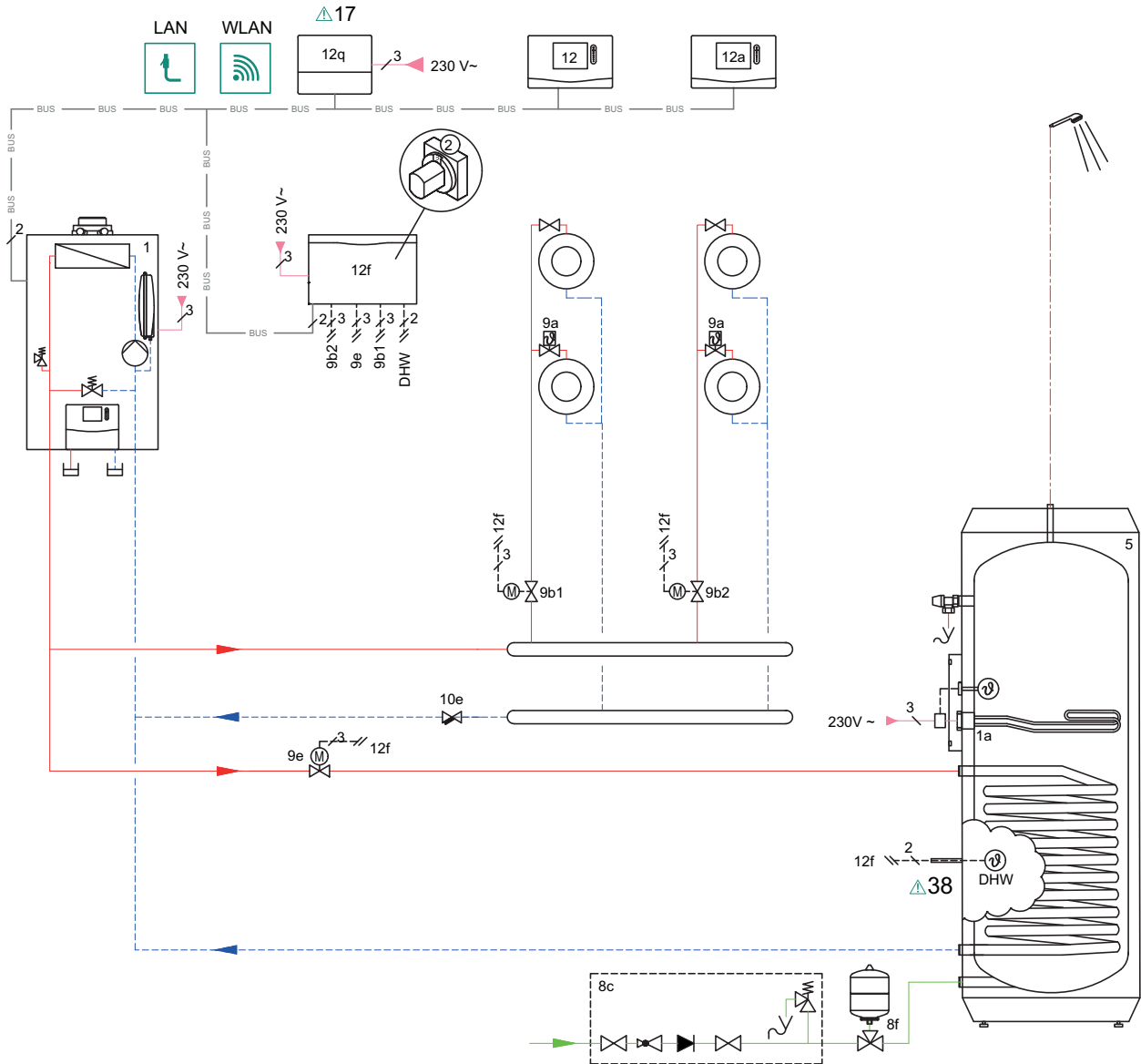
The standard installation for multizone mode is characterised by:

- 2 port valves for zoning,
- 2 VRT 350 programmable wired room thermostats or
- 1 VRT 380 room thermostat combined with 1 VR 92,
- heating zones and DHW cylinder cannot operate in parallel.

Priorities are defined as follows:

Priority levels	Function
1	Domestic hot water
2	Central heating

3.2.6 Multizone mode : Open vent or system boiler with DHW cylinder

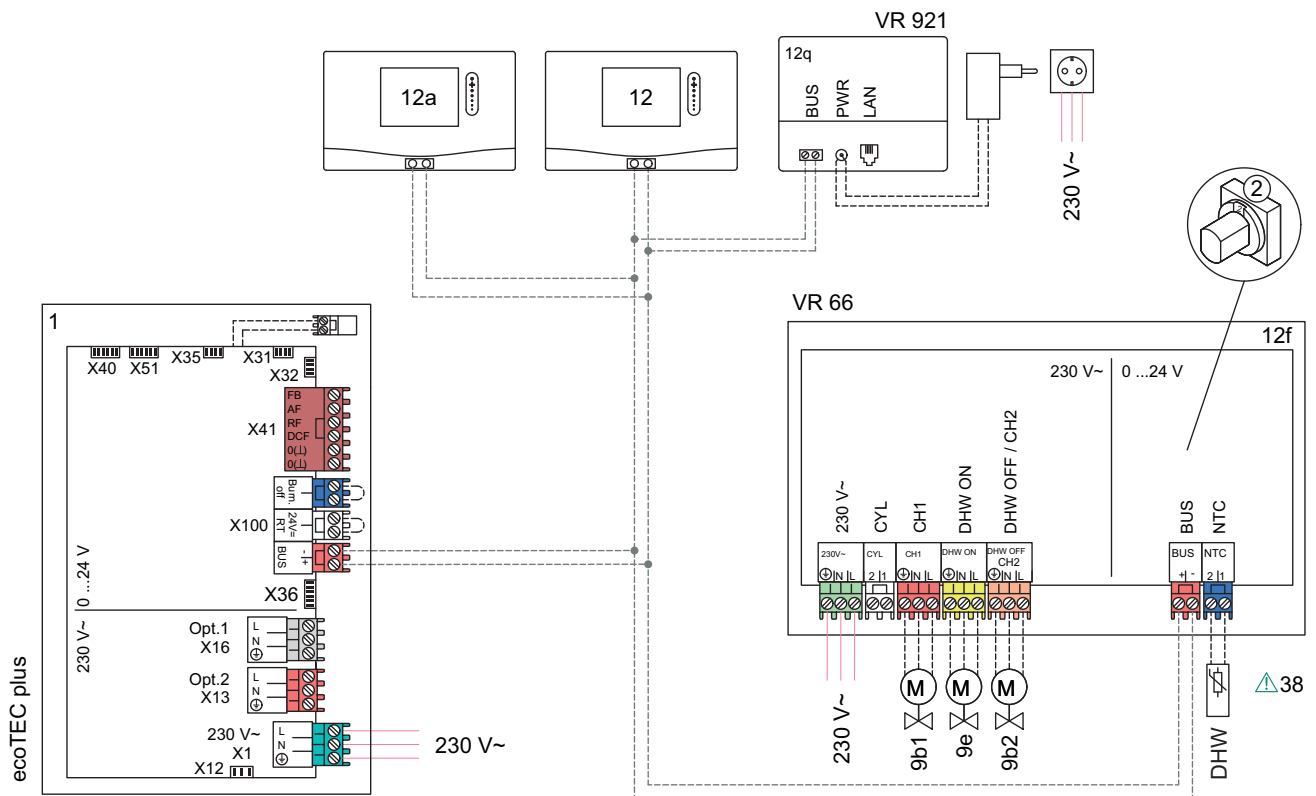


Key

- 1 Heat generator
- 1a Back-up heater for domestic hot water
- 5 Monovalent domestic hot water cylinder
- 8c Safety assembly for the potable water connection
- 8f Expansion vessel for potable water
- 9a Single-room temperature control valve (thermostatic/motorised)
- 9b Zone valve
- 9e Diverter valve for potable water
- 10e Line strainer with magnetite separator
- 12 System control
- 12a Remote control
- 12f VR 66/2 control centre
- 12q Internet gateway (optional)

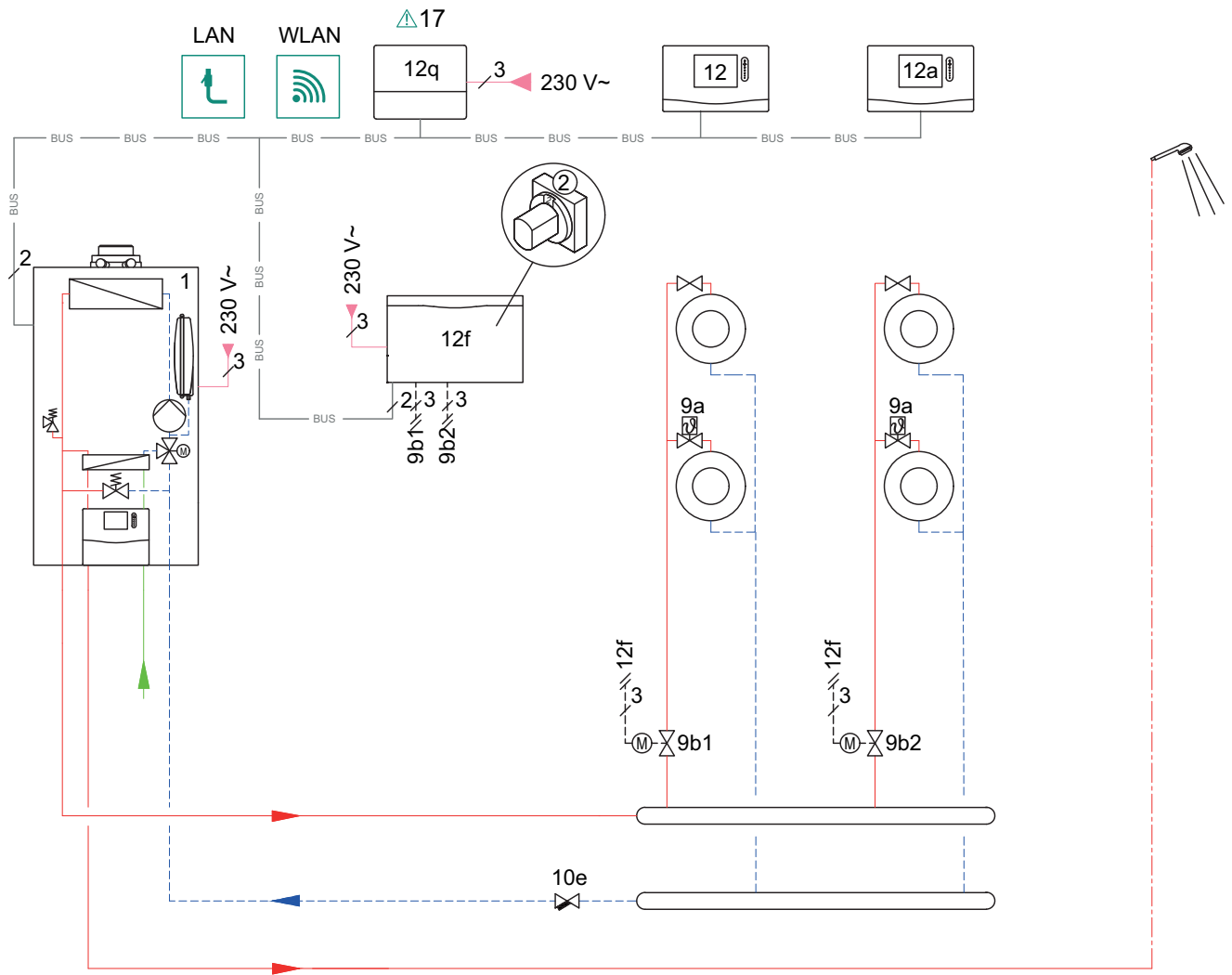
△ 17 Optional component

△ 38 If a thermostat shall be used, instead of the DHW temperature sensor; remove the DHW temperature sensor, mount the thermostat, and connect the thermostat on clamp 'CYL'.



⚠ 38 If a thermostat shall be used, instead of the DHW temperature sensor; remove the DHW temperature sensor, mount the thermostat, and connect the thermostat on clamp 'CYL'.

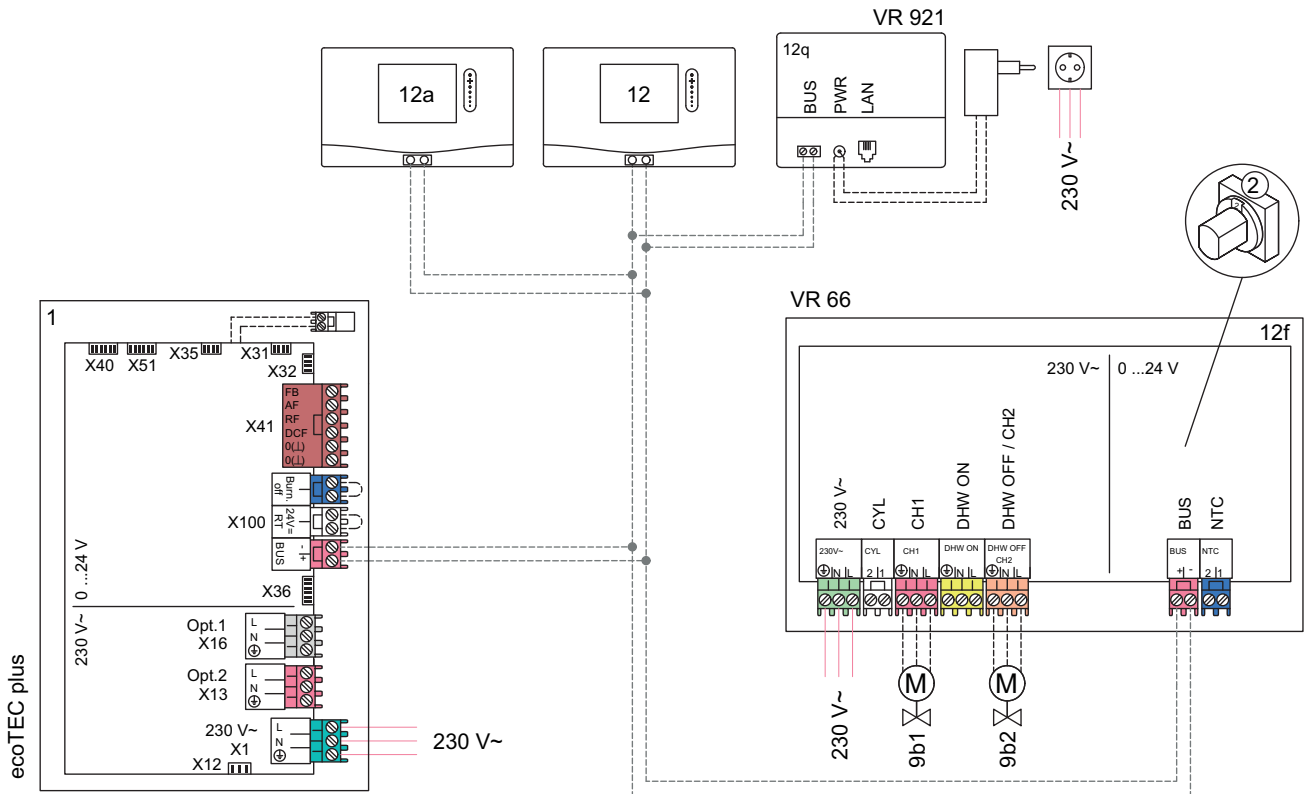
3.2.7 Multizone mode with combi boiler



Key

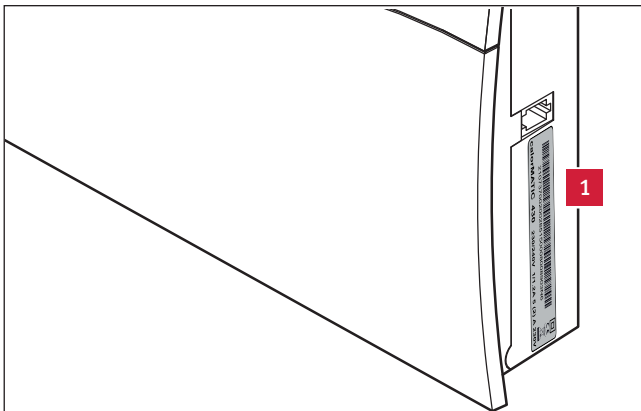
- 1 Heat generator
- 9a Single-room temperature control valve (thermostatic/motorised)
- 9b Zone valve
- 10e Line strainer with magnetite separator
- 12 System control
- 12a Remote control
- 12f VR 66/2 control centre
- 12q Internet gateway (optional)

△ 17 Optional component



3.3 Type designation and serial number

Data plate location:



3.4 Data plate description

The data plate certifies the country where the product is intended to be installed.

The data plate contains the following data:

Abreviation/symbol	Description
Brand and Product name	Vaillant VR 66/2
Model	Product article number
V/Hz	Hz Voltage / Frequency
T	Temperature range
Serial-no	Product serial number
VA	Power Consumption

4 Mounting and installation



All the dimensions shown of the illustrations are expressed in millimetres (mm).

4.1 Preparing the mounting and installation

4.1.1 Considering the product location

Before choosing a site for the appliance, carefully read the safety warnings and instructions in the user guide and installation manual.

- Explain these requirements to the appliance user.
- Take all necessary precautions.

Install the system:

- in a room protected from frost,
- in a convenient location, accessible for wiring and servicing.

Do not install the control centre:

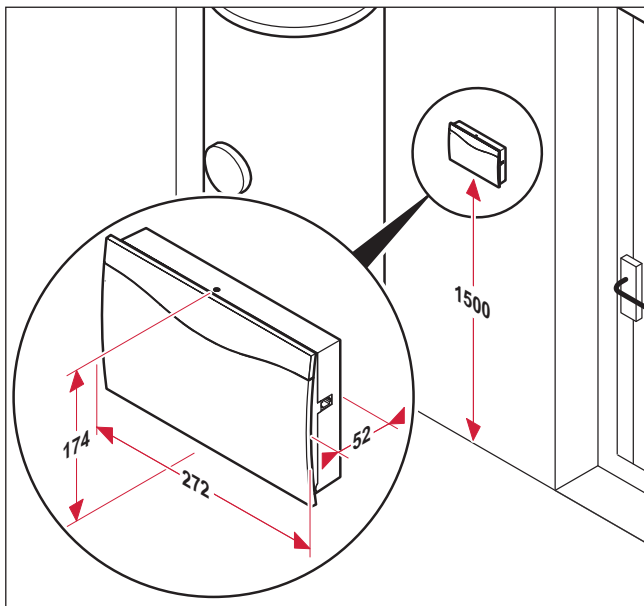
- close to heat sources such as radiators, chimney walls, televisions, direct sunlight,
- above a cooking device capable of generating steam and grease,
- in a room with a lot of dust or with a corrosive atmosphere.



Caution!

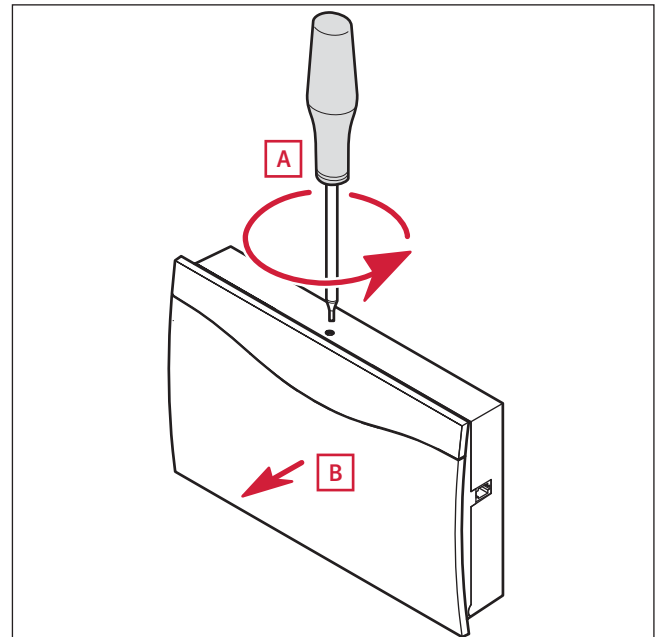
These pipes can become very hot which will damage the cables or the system.

- The electrical cables must not be attached to or in contact with the hydraulic pipes.



4.2 Mounting the product

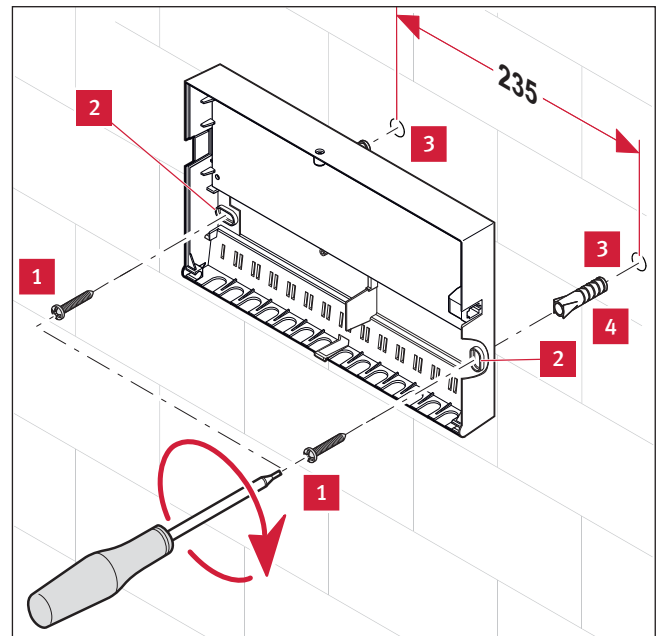
4.2.1 Opening the VR 66/2



- Unscrew (A) the screw securing the housing cover.
- Pull (B) the housing cover forwards.

4.2.2 Wall-mounting of the product

The control centre is designed to be attached to a wall near the main tank inside a dwelling.



Key

- 1 Screws
- 2 Attachment holes
- 3 Holes
- 4 Plugs

- Determine the position depending on the requirements of the preceding chapter: "Appliance location".

4.3 Electrical Installation



Danger!
Incorrect installation can cause electric shock or appliance damage.
 The electrical connection of the appliance must be made only by a qualified engineer.
 > Ensure system is electrically isolated.
 Protect the electrical installation by following the guidance indicated in the "Technical data" chapter.



Danger!
 > The length of the power supply cable must not exceed 10 metres.

- > The electrical installation in the dwelling must permit the power supply to the equipment to be isolated by a double pole isolation switch and be fused. The double pole isolation switch must incorporate a gap of 3 mm between the contacts.
- > Use a power cable suitable for the main connection, minimum 1.5 mm. If the cable is damaged, it must be replaced by a qualified engineer.

The external wiring must be earthed, with correct polarity and in accordance with current standards.

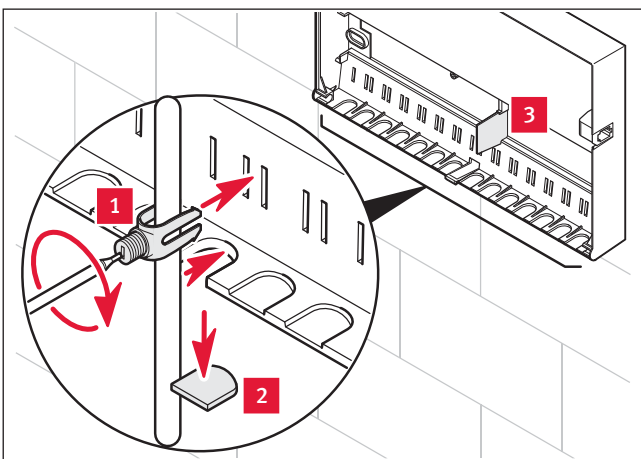
The manufacturer declines any responsibility for damages to persons or others caused by the incorrect installation of the appliance earthing. This includes failure to comply with current standards.



Caution!
 These pipes can become very hot which will damage the cables or the system.
 > The electrical cables must not be attached to or in contact with the hydraulic pipes.

4.3.1 Description of connections

All of the internal connections are made directly to the circuit board.

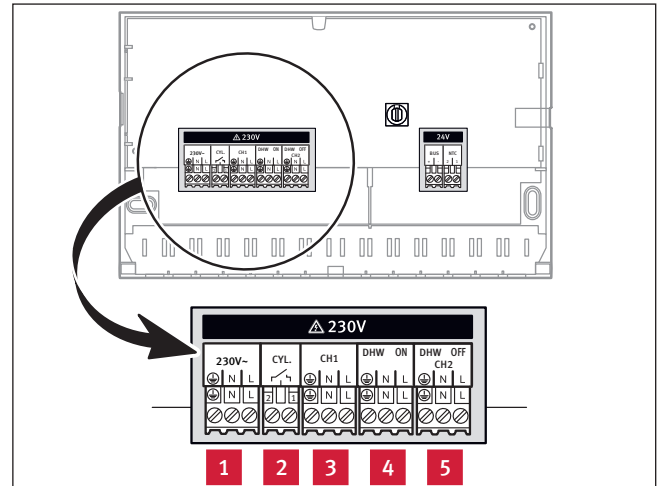


Key

- 1 Cable clamp
- 2 Divisible wire grommet
- 3 Separating high and low voltage

The circuit board connectors are divided into two parts. The left part accepts a 230 V power supply whereas the right part is used for 24 V power.

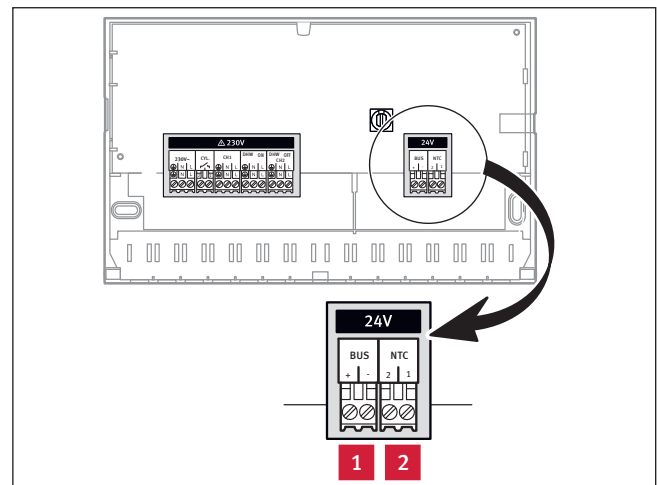
230V connectors (High voltage)



Key

- 1 230 V supply connector (3 pins: earth / neutral / live)
- 2 Cylinder thermostat connector (2 pins)
- 3 Heating zone 1 valve (3 pins: earth/neutral/ live)
- 4 DHW valve ON (3 pins: earth / neutral / live)
- 5 DHW valve OFF - Heating zone 2 valve (3 pins: earth/neutral/ live)

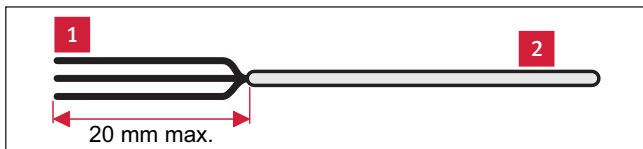
24V connectors (low voltage)



Key

- 1 eBUS connector (2 pins)
- 2 NTC connector (2 pins)

4.3.2 Main board



Key

- 1 Electrical wires
- 2 Casing

When you connect the electrical wires to a connector on the main electronic board:

- Keep a distance of a maximum of 20 mm between connector and the start of the insulation (2).
- If single core wires are used (1) ensure that they are wrapped together in an insulating sheath.
- Fix the cables in the cable-clamps on the unit.

5 Commissioning

The commissioning should be carried out by a competent person approved at the time by the Health and Safety Executive and in accordance with the current issue of BS6798.

- Completely open all the radiator thermostatic valves in the rooms where the room thermostats were been installed.

5.1 Filling

5.1.1 Boiler

Commission the boiler according to the instructions of its installation manual.

- Refer to the installer manual.

5.1.2 Heating circuit

- Manually open the different heating circuit valves.

5.2 Venting

5.2.1 Boiler

Commission the boiler according to the instructions of its installation manual.

- Refer to the installer manual.

5.2.2 Heating circuit adjustment

Venting of the heating circuit enables the purging of any air in the heating circuit (valves still manually opened).

- Open the different heating circuit air vent.



Caution!

- When venting is complete, close the different heating circuit air vent and valves.

5.3 Switching on

- Turn on all the appliances that make up the installation (see the installation manual(s)). Use the following order:
 - Control centre
 - Boiler

5.4 Multizone specific adjustment

In case of multizone mode selection (rotary switch in pos 0), the pairing must be made between the room thermostat(s) and control centre in the system heating (one after the other).

- Follow the install assistant of the room thermostat “zone 1”.
- Consult the installation manual of the room thermostat in order to carry out the operation.
- Repeat the operation with the room thermostat “zone 2”

5.5 Restart and check

- Check if all settings have been saved by switching the system off and then on to ensure that any adjustments operate correctly and check that the appliances operate safely.
- Check if the system answers correctly to a demand:
 - issue a heating demand for the heating zone 1
 - issue a heating demand for the heating zone 2 (if multizone mode is selected)
 - issue a domestic hot water demand (if DWH tank is connected)

6 User information

At the end of the installation, the installer must:

- explain the operation of the appliance and its safety devices to the user, if necessary provide a demonstration and answer any questions;
- give the user all the required documentation,
- fill in the documents where necessary;
- advise the user of the precautions necessary to prevent damage to the system, appliance and the building;
- remind the user to service the appliance annually.

7 Maintenance

7.1 Trouble-shooting

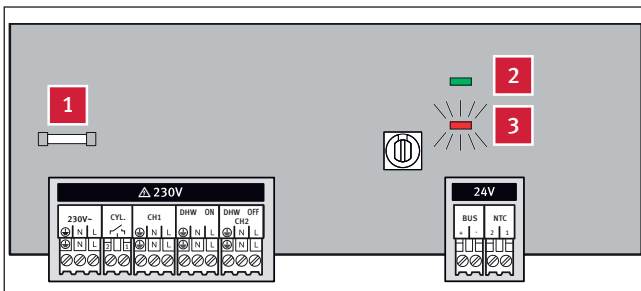
7.1.1 Fault diagnosis

The following checks should be performed before proceeding onto specific diagnostics:

- Ensure that the control centre has not been disconnected from the electricity supply and that it is connected correctly.
- Ensure that all installation's appliances are available.
- Check the functioning of external regulatory devices (room thermostat(s)).



The rectification of faults described in this chapter should be carried out by a qualified engineer and if needed by the After Sales Service.



Key

- 1 Fuse
- 2 Green LED, power supply
- 3 Red LED flashes, fault

Fault	Possible cause	Solution
Green LED permanently off	No 230 V power supply or the fuse in the appliance is faulty	Check that the main voltage cable is connected correctly. Check the domestic fuse for the 230 V supply and re-connect the power supply. Replace the main supply fuse in the control centre (see technical data).
Red LED flashes quickly (2 Hz, 2 flashes/second)	Short circuit of the connected temperature sensor (NTC) in the cylinder	Check the cable of the temperature sensor (NTC) for damage. Replace the temperature sensor (NTC) in the cylinder.
Red LED flashes slowly (0,5 Hz, 1 flash/ 2 seconds)	Communications error with the eBUS boiler.	Check that the boiler's eBUS cable is connected correctly and not damaged. Check that the boiler is turned on.
Heating zone valves not operating DHW valve not operating	Valve disconnected. Valve doesn't open.	Check the room thermostat(s) compatibility and connections. Check the valve connections. Check the room thermostat(s) pairing. Ensure that there is no interruption to the electricity supply and that the control centre is properly connected and turned on.
Fault domestic hot water cylinder	Cylinder dual thermostat disconnected. The temperature sensor is defective or disconnected.	Check the cylinder dual thermostat and temperature connections. Check the sensor's resistance. Ensure that there is no interruption to the electricity supply and that the control centre is properly connected and turned on.

7.2 Main supply cable



Danger!

- The main supply cable must be replaced by a qualified and competent electrician.

- If the main supply cable is damaged, replace it referring to the chapter "Electrical connection".

8 Decommissioning

- Switch off the product.
- Isolate the product from the power mains.
- De-install the product.
- Recycle or dispose the product and its components (see chapter 9).

9 Recycling and disposal

This product is an electrical or electronic unit within the context of EU Directive 2012/19/EU. The unit was developed and manufactured using high-quality materials and components. These can be recycled and reused.

Find out about the regulations that apply in your country regarding the separate collection of waste electrical or electronic equipment. Correctly disposing of old units protects the environment and people against potential negative effects.

- Dispose of the packaging correctly.
- Observe all relevant regulations.

Disposing of the product



If the product is labelled with this symbol:

- In this case, do not dispose of the product with the household waste.
- Instead, hand in the product to a collection centre for waste electrical or electronic equipment.

Disposing of batteries



If the product contains batteries that are labelled with this symbol:

- In this case, dispose of the batteries at a collection point for batteries.
 - **Prerequisite:** The batteries can be removed from the product without causing any destruction. Otherwise, the batteries are disposed of together with the product.
- In accordance with the legal regulations, the end user is obligated to return used batteries.

Deleting personal data

Personal data may be misused by unauthorised third parties.

If the product contains personal data:

- Ensure that there is no personal data on or in the product (e.g. online login details or similar) before you dispose of the product.

10 Customer service

For contact details for our customer service department, you can write to the address that is provided on the back page, or you can visit www.vaillant.co.uk.

11 Technical data

Description	Unit	VR 66/2
Power-supply voltage	V, Hz	230, 50/60
Power consumption	W	20
Contact load of output relays (max.)	A	2
Delay fuse	A	T 4 A/250 V
Contact voltage for DHW cylinder thermostat	V	230
Temperature sensor (NTC) operating voltage	V	5
Thermistor NTC at 25°C	kOhm	2.7
eBUS connection cable gauges	mm ²	2 x 0.75
Maximum length of eBUS cable	m	300
Power cable gauge	mm ²	3 x 1.5
Maximum length of power cable	m	10
Dimensions :		
– Height	mm	185
– Length	mm	281.3
– Depth	mm	49.5
Electrical protection		IP20
Electrical classification		I

Supplier

Vaillant Ltd

Nottingham Road ■ Belper ■ Derbyshire ■ DE561JT
Telephone 0330 100 3143 ■ www.vaillant.co.uk ■ info@vaillant.co.uk



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Manufacturer

Vaillant GmbH

Berghauser Str. 40 ■ D-42859 Remscheid
Tel. +49 21 91 18-0 ■ Fax +49 21 91 18-2810
info@vaillant.de ■ www.vaillant.de

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